

REMARKS / ARGUMENTS

In complete response to the Office Action dated December 27, 2005, on the above identified application, reconsideration is respectfully requested. Claims 22 – 35, and 37 – 54 are pending in this application.

With this amendment, claims 39 – 42, 46, 48, 51, and 53 are amended, and claim 36 is cancelled.

Drawings:

The drawings are objected to under 37 CFR 1.83(a), for failing to show every feature of the invention specified in the claims. Claims 39, 41, and 53 have been amended to refine the terms “injection zone” to read “injection pipe”, thereby rendering these objections moot as pertaining to claims 39, 41, and 53.

Claim Rejections Under 35 U.S.C. § 112:

Claims 39 – 54 stand rejected under 35 U.S.C. § 112, first paragraph, as lacking enablement. The Examiner notes that the specification does not enable any person skilled on the art to understand a “cross section of injection zone is smaller than the spraying means”, by virtue of an examination in of the specification. Applicant respectfully proposes that the Examiner has inadvertently misconstrued claim 39.

Claims 39 and 53 have been amended to refine the terms “mixing area” to read “mixing pipe” and to refine the terms “injection zone” to read “injection pipe”. This has been done to better define the invention, and to make the terminology consistent with those terms used in the specification. Applicant respectfully suggests that this also makes the nature of the invention defined in claim 39 more clear.

- The term “mixing pipe” is clearly identified within the specification (and the claims as originally filed) as referring to element 6.
(See generally page 4, line 17 – page 7, line 24 of the specification, and claims 10 – 12, 15, 17, and 20 as originally filed)
- The term “impact surface” is clearly identified within the specification (and the claims as originally filed) as referring to element 10.

(See generally page 4, line 29 – page 5, line 25 of the specification, and claims 3, 10, 12, and 13 as originally filed)

- The term “means for spraying liquid nitrogen” is clearly identified within the specification (and the claims as originally filed) as referring to element 18.
(See generally page 5, line 9 – page 7, line 11 of the specification, and claims 10, 11, 14, and 18 as originally filed)
- The term “injection pipe” is clearly identified within the specification (and the claims as originally filed) as referring to element 5.
(See generally page 4, line 23 – page 7, line 6 of the specification, and claims 10 and 12 as originally filed)

Claims 39 and 53 have also been amended to better define the relationships between these elements. It is clear from the figures, as well as the specification and the claims as originally filed, that the injection pipe (5) and impact surface (10), in addition to the spraying means (18) were intended by the inventor to be contained within the mixing pipe (6). Hence, the mixing pipe (6) must have a larger cross-section than either the impact surface or the spraying means. One skilled in the art would recognize that this was disclosed in the original filing and does not constitute new matter.

Therefore, the amendments made to claims 39 and 52 render the § 112, first paragraph rejections, as pertaining to claims 39 – 54 moot.

Double Patenting:

Claims 35 and 36 stand rejected under the statutory type of double patenting, as they claim substantially the same matter. Claim 36 has been deleted, thereby rendering this rejection moot.

Claim Rejections Under 35 U.S.C. § 102:

Claims 22 – 33, and 35 – 38 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Miller et al. '673. Applicant respectfully submits that claims 22 – 33, and 35 – 38 are not anticipated by Miller et al. '673.

Claim 22 pertains to the cooling of a *gaseous* fluid. Miller et al. '673 pertains to the freezing of "liquid and pasty products." (See at least column 3, line 40.) These "liquid and pasty products" are further defined as "liquid egg, cream, sauce, gravy, chopped spinach, pharmaceutical products and blood products" (column 3, lines 63 – 65). Miller et al. '673 does not disclose "a method which may be used for cooling a stream of gaseous fluid" as required by claim 22.

Claim 22 requires "slowing the flow rate of said fluid by increasing the cross section of said stream." At no time does the cross-section of the stream of "liquid and pasty products" noticeably increase, since they are simply dropped into a droplet dispenser (element 5) and then simply dropped on to the drum (column 4, line 59 – column 5 line 15).

Claim 22 requires "spraying the liquid nitrogen into said stream to cool said fluid." Miller et al. '673 admits the "liquid and pasty products" axially (element 23 in the sole figure), which are then chilled (or frozen) by indirect heat exchange with the cryogen. Miller et al. '673 teaches chilling the inside of the drum (element 2) with the cryogenic fluid, and then dropping the "liquid and pasty products" to the surface of the drum where they solidify (column 5, lines 4 – 6). As enabled, at no time does the cryogenic liquid actually come into contact with the "liquid and pasty products".

There is a sentence at the bottom of Miller et al. '673 specification in which it is stated that "In any of the above arrangements at least part of the cryogen leaving the drum may be sprayed directly on the product being frozen", but this disclosure is not enabled. One skilled in the art would find no description in the specification or the figures that will allow her to reconfigure the indirect heat exchange system which is painstakingly detailed in Miller et al. '673 to allow such a direct contact heat exchange.

Claim 22 requires "recovering the cooling fluid." Miller et al. '673 requires "removing and collecting said individually frozen granules" (*claim 1, and specification generally*), but does not disclose or enable the recovery of the cooling fluid.

Therefore, the § 102 rejection is unsupported and should be withdrawn.

Claim Rejections Under 35 U.S.C. § 103:

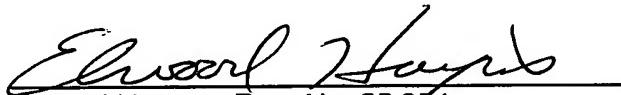
Claim 34 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller et al. '673. Applicant respectfully submits that claim 34 is not unpatentable over Miller et al. '673, for all the reasons discussed above.

Therefore, the § 103 rejection is unsupported and should be withdrawn.

CONCLUSION

Accordingly, it is believed that the present application now stands in condition for allowance. Early notice to this effect is earnestly solicited. Should the Examiner believe a telephone call would expedite the prosecution of the application, he is invited to call the undersigned attorney at the number listed below.

Respectfully submitted,



Elwood Haynes, Reg. No. 55,254

Date: **March 29, 2006**

Air Liquide
2700 Post Oak Blvd., Suite 1800
Houston, Texas 77056
Phone: (713) 624-8956
Fax: (713) 624-8950

CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 29th day of March, 2006.



Diana Guzman